

What is claimed is:

1. A method for making a composite comprising:
 - (a) extruding a foamable gel comprising a blowing agent and a foamable polyester through a multi-orifice die to give a plurality of strands;
 - (b) foaming the strands to form a multi-stranded foamed article;
 - (c) shaping the multi-stranded foamed article to give a core material; and
 - (d) bonding the core material to one or more structural skins.
2. The method of claim 1, further comprising coalescing the strands after foaming the strands.
3. The method of claim 1, wherein foaming the strands comprises expanding the blowing agent.
4. The method of claim 2, wherein coalescing the strands produces inter-strand voids.
5. The method of claim 4, wherein shaping the multi-stranded foamed article removes substantially all the inter-strand voids.
6. The method of claim 1, wherein the core material is shaped to produce a plurality of discrete volumes, each discrete volume comprising an interior section and a corresponding jacket, wherein the average cell size in the interior section is larger than the average cell size in the jacket.
7. The method of claim 1, wherein the core material is bonded between two structural skins.
8. The method of claim 1, wherein the one or more structural skins comprises a thermoplastic polymer, a thermosetting polymer, wood, an inorganic material, or a metallic material.
9. The method of claim 8, wherein the thermoplastic or thermosetting polymer comprises glass fibers, metallic fibers, inorganic fibers, or carbon fibers.
10. The method of claim 1, wherein the one or more structural skins comprise a structural sandwich composite.
11. The method of claim 1, wherein bonding the core material to the one or more structural skins comprises applying a resin to the core material or to the one or more structural skins.
12. The method of claim 1, wherein bonding the core material to the one or more structural skins comprises applying heat.

13. The method of claim 1, wherein bonding the core material to the one or more structural skins comprises vacuum bagging.

14. The method of claim 1, wherein the foamable gel comprises a nucleating agent, a fire retardant, or a reinforcing agent.

15. The method of claim 1, wherein the foamable polyester comprises foamable polyethylene terephthalate, foamable polybutylene terephthalate, foamable polyethylene naphthalate, a foamable copolymer of polyethylene terephthalate, a foamable copolymer of polybutylene terephthalate, a foamable copolymer of polyethylene naphthalate, or a mixture thereof.

16. The method of claim 1, wherein the foamable polyester comprises foamable polyethylene terephthalate.